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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,678	01/16/2002	Michinori Kishimoto	M2047-39	5099

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EXAMINER	
NGUYEN, DUC M	

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/050,678	KISHIMOTO ET AL.	
	Examiner	Art Unit	
	Duc M. Nguyen	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *29 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15 and 17-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-11* is/are allowed.

6)☒ Claim(s) *12-15 and 23-28* is/are rejected.

7)☒ Claim(s) *17-22* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to applicant's response filed on 3/29/05. Claims 1-15, 17-28 are now pending in the present application.

Specification

1. The disclosure is objected to because of the following informalities: claim 24 recites the limitation of "selecting a path (or antenna) with uniform probability". However, it is not clear what the term "uniform probability" means for this limitation in the claim. More explanation is needed in the specification to clarify the above limitation (i.e, does it means that the antenna is selected randomly ??).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims **12, 14-16, 23, 26-27** are rejected under 35 U.S.C. 102(e) as being anticipated by **Boetzel et al (US 2002/0141374)**

Regarding claim **12, Boetzel** discloses an antenna diversity communications device for communicating by means of frequency hopping, said communications device comprising:

at least first and second communications paths (see **[0009]-[0010], [0023]**);

a first antenna on said first communications path (see **[0009]-[0010], [0023]**);

a second antenna on said second communications path (see **[0009]-[0010], [0023]**);

a switching means for alternatively selecting one said first and second communications paths from said at least first and second communications paths (see **[0009]-[0010]**),

a reception information measuring means for measuring signal information that indicates a receiving condition of a path selected by said switching means (see **[0009]-[0010]**),

a memory means for storing signal information measured by said reception information measuring means(see **[0009]-[0010]**); and

means for selecting a one of said at least first and second communications paths based on said signal information stored in said memory means(see **[0009]-[0010]**).

updating the table each time a frequency hopping is switched (see [**0012**]).

Regarding claims **14-15**, the claims are rejected for the same reason as set forth in claim 1 above. In addition, it is clear that **Boetzel** would disclose memory means and switching means as claimed (see [0011]).

Regarding claim **16**, the claim is rejected for the same reason as set forth in claim 7 above. In addition, it is clear that **Boetzel** would disclose the information is updated each time the hopping is switched (see [0012]).

Regarding claim **23**, the claim is rejected for the same reason as set forth in claim 12 above. In addition, it is clear that **Boetzel** would disclose storing all the information as claimed (see [0012]).

Regarding claim **26**, the claim is rejected for the same reason as set forth in claim 12 above. In addition, it is clear that **Boetzel** would disclose the detected level is the received intensity (see [0011]).

Regarding claim **27**, the claim is rejected for the same reason as set forth in claim 12 above. In addition, it is clear that **Boetzel** would disclose the transmission is carried out using the switched antenna (see Abstract).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim **13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Boetzel** in view of **Takai** et al (**US 5,561,673**).

Regarding claim **13**, the claim is rejected for the same reason as set forth in claim 2 above. However, **Boetzel** fails to disclose the signal information is one of a combination of intensity, quality condition and error detection. However, **Takai** discloses an antenna diversity switching method wherein the signal information is a combination of intensity (RSSI) and error (BER) detection (see Fig. 11A and Abstract). Since **Boetzel** suggests that the best reception quality can be RSSI, power or SNR (see [0011]), it would have been obvious to one skilled in the art to incorporate the above teaching of **Takai** to **Boetzel** for providing a signal information as claimed, for improving system performance when selecting an antenna.

5. Claim **24** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Boetzel**

Regarding claim **24**, the claim is rejected for the same reason as set forth in claim 12 above. In addition, it would have been obvious to one skilled in the art to modify **Boetzel** for selecting an antenna randomly (uniform probability) at the initial selection as claimed, in order to obtain an antenna for transmission.

6. Claims **24-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Boetzel** in view of **Anvekar** et al (**US 6,594,475**).

Regarding claim **24**, the claim is rejected for the same reason as set forth in claim 12 above. However, **Boetzel** is silence on selecting an antenna in an initial condition. However, **Ankevar** discloses an antenna diversity switching method wherein selecting an antenna in an initial condition is based on "uniform probability" (Here, since all the antennas have the **same probability** of receiving a signal, hence the antenna located closed to the center of the cell would have a "uniform probability" as of the other antennas, see col. 4, lines 44-48). Therefore, it would have been obvious to one skilled in the art to incorporate the above teaching of **Ankevar** to **Boetzel** for providing an initial selection as claimed, to ensure sufficient signal strength is received by the base station during the first transmission from a mobile.

Regarding claim **25**, the claim is rejected for the same reason as set forth in claim 24 above. In addition, it would have been obvious to return the switching to the intial condition when communication are conducted for a prescribed period as disclosed by **Ankevar** (see col. 4, lines 30-42), for improving the switching performance next time a communication is initiated.

7. Claim **28** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Boetzel** in view of **Fakatselis** et al (**US 6,563,858**).

Regarding claim **13**, the claim is rejected for the same reason as set forth in claim 2 above. However, **Boetzel** fails to disclose the signal information updating including concerns of the ACK/NAK information in a transmission response. However, **Fakatselis** discloses an antenna diversity switching method wherein the antenna

switching is also based on the ACK/NAK information in a transmission response (see col. 15, line 22 – col. 16, line 17). Therefore, it would have been obvious to one skilled in the art to incorporate the above teaching of **Fakatselis** to **Boetzel** for updating ACK/NAK information as claimed, for improving system performance by utilizing feedback information of the receiving side.

Allowable Subject Matter

8. Claims **1-11** are allowed.

9. Claims **17-22** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 1, 3, 17, 19, the cited prior art fails to disclose or make it obvious an apparatus or method for antenna diversity in a frequency hopping communication system which comprises components and steps as specified in the claims, wherein a correlation of hopping frequencies is used in determining the switching, the update or the storing as specified in the claims.

Response to Arguments

11. Applicant's arguments with respect to claims 12, 14-16, 23, 26-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kokno et al (US 6,728,294), Radio communication system.

13. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for formal communications intended for entry)

(571)-273-7893 (for informal or draft communications).

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893, Monday-Thursday (9:00 AM - 5:00 PM).

Or to Edward Urban (Supervisor) whose telephone number is (571) 272-7899.

Duc M. Nguyen

June 18, 2005